

Technical Report 5-20239 & 5-20240
Contract No. DAAH01-98-D-R001
Delivery Order No. 19

**War Reserve Analysis
and Secondary Item Procureability Assessment
of the AMCOM Supported Weapon Systems**

(5-20239 & 5-20240)

Final Technical Report for Period
26 June 1998 through 31 January 2000

February 2000

Prepared by:

Gary A. Maddux

Systems Management & Production Lab
The University of Alabama in Huntsville
Huntsville, Alabama 35899

Prepared for:

U.S. Army Aviation & Missile Command
Redstone Arsenal, AL 35898
Attn.: Mr. Dan Frey

20000309 073

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE February 2000	3. REPORT TYPE AND DATES COVERED Final Report: 26 JUN 98 thru 31 JAN 00	
4. TITLE AND SUBTITLE War Reserve Analysis and Secondary Item Procureability Assessment of the AMCOM Supported Weapon Systems			5. FUNDING NUMBERS	
6. AUTHOR(S) Gary A. Maddux				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Univ. of Alabama in Huntsville Huntsville, AL 35899			8. PERFORMING ORGANIZATION REPORT NUMBER 5-20239 & 5-20240	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AMSAM-RD-SE-IO (D. FREY) U.S. Army Aviation & Missile Command Redstone Arsenal, AL 35898			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for Public Release; Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 words) The Industrial Operations Division (IOD), Engineering Directorate (ED), Aviation and Missile Research, Development and Engineering Center (AMRDEC), AMCOM has the mission and function of providing industrial base assessments and producibility and supportability analyses for AMCOM weapon systems. IOD evaluates the impacts of nonavailability of secondary items on the life cycle supportability of AMCOM weapon systems and evaluates the producibility of secondary items for war reserve requirements. IOD required engineering support in performing availability assessments for several hundred secondary items and in assessing the impact of nonavailability on AMCOM weapon systems. IOD also required engineering support in performing producibility analyses of the required secondary items. In order to facilitate the assessment of these systems, the Systems Management and Production Laboratory at UAH was tasked to conduct an in-depth analysis as to the war reserve requirements of the AMCOM weapon system's components.				
14. SUBJECT TERMS WAR RESERVE, INDUSTRIAL BASE			15. NUMBER OF PAGES 3	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

PLEASE CHECK THE APPROPRIATE BLOCK BELOW

DAO# _____

☐ _____ copies are being forwarded. Indicate whether Statement A, B, C, D, E, F, or X applies.

☒ DISTRIBUTION STATEMENT A:

APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED

☐ DISTRIBUTION STATEMENT B:

DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES ONLY; (indicate Reason and Date). OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ DISTRIBUTION STATEMENT C:

DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND THEIR CONTRACTS (Indicate Reason and Date). OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ DISTRIBUTION STATEMENT D:

DISTRIBUTION AUTHORIZED TO DoD AND U.S. DoD CONTRACTORS ONLY; (Indicate Reason and Date). OTHER REQUESTS SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ DISTRIBUTION STATEMENT E:

DISTRIBUTION AUTHORIZED TO DoD COMPONENTS ONLY; (Indicate Reason and Date). OTHER REQUESTS SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ DISTRIBUTION STATEMENT F:

FUTHER DISSEMINATION ONLY AS DIRECTED BY (Indicate Controlling DoD Office and Date) or HIGHER DoD AUTHORITY.

☐ DISTRIBUTION STATEMENT X:

DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND PRIVATE INDIVIDUALS OR ENTERPRISES ELIGIBLE TO OBTAIN EXPORT-CONTROLLED TECHNICAL DATA IN ACCORDANCE WITH DoD DIRECTIVE 5230.25. WITHHOLDING OF UNCLASSIFIED TECHNICAL DATA FROM PUBLIC DISCLOSURE, 6 Nov 1984 (indicate date of determination). CONTROLLING DoD OFFICE IS (Indicate Controlling DoD Office).

☐ This document was previously forwarded to DTIC on _____ (date) and the AD number is _____.

☐ In accordance with provisions of DoD instructions. The document requested is not supplied because:

☐ It will be published at a later date. (Enter approximate date, if known).

☐ Other. (Give Reason)

DoD Directive 5230.24, "Distribution Statements on Technical Documents," 18 Mar 87, contains seven distribution statements, as described briefly above. Technical Documents must be assigned distribution statements.

GARY A. MADDUX

Print or Type Name

Gary A Maddux 29 Feb 00
Authorized Signature/Date

256 890 6343 x223

Telephone Number

PREFACE

This technical report was prepared by the staff of the Research Institute, The University of Alabama in Huntsville. The purpose of this report is to provide documentation of the work performed and results obtained under Delivery Order 19 of AMCOM Contract No. DAAH01-98-D-R001. Mr. Gary Maddux was the principal investigator. Mr. George Wandler served as the lead engineer. Mr. Dan Frey, Industrial Operations Division, Engineering Directorate, Aviation and Missile Research, Development, and Engineering Center, U.S. Army Aviation & Missile Command, provided technical coordination. Mr. Jim Cruce, Industrial Operations Division, AMCOM, provided technical expertise and insights in war reserve analyses.

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other official documentation.

Except as provided by the Contract Data Requirements List DD Form 1423, hereof, the distribution of any contract report in any state of development or completion is prohibited without the approval of the Contracting Officer.

Prepared for: Commander
U.S. Army Aviation & Missile Command
Redstone Arsenal, AL 35898

I have reviewed this report, dated February 2000 and the report contains no classified information.



Principal Investigator

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	OBJECTIVES	1
3.0	STATEMENT OF WORK	1
4.0	ANALYSES OF WAR RESERVE REQUIREMENTS	2
5.0	CONCLUSIONS AND RECOMMENDATIONS	2

1.0 Introduction

The Industrial Operations Division (IOD), Engineering Directorate (ED), Aviation and Missile Research, Development and Engineering Center (AMRDEC), AMCOM has the mission and function of providing industrial base assessments and producibility and supportability analyses for AMCOM weapon systems. IOD evaluates the impacts of nonavailability of secondary items on the life cycle supportability of AMCOM weapon systems and evaluates the producibility of secondary items for war reserve requirements. IOD required engineering support in performing availability assessments for several hundred secondary items and in assessing the impact of nonavailability on AMCOM weapon systems. IOD also required engineering support in performing producibility analyses of the required secondary items.

In order to facilitate the assessment of these systems, the Systems Management and Production Laboratory at The University of Alabama in Huntsville Research Institute was tasked to conduct an in-depth analysis as to the war reserve requirements of the AMCOM weapon system's component parts.

2.0 Objective

The purpose of the work performed under this task order was to provide engineering support to analyze the availability of secondary items used to support war reserve requirements in AMCOM weapon systems and to investigate and develop industrial base recommendations. Determination of the producibility of the war reserve secondary items was required.

3.0 Statement of Work

The statement of work, as outlined in delivery order 19, was as follows:

- 3.1 UAH shall analyze the availability of secondary items needed in the war reserve stock inventory of AMCOM weapon systems. The analysis shall be for secondary items specifically identified by the IOD. UAH shall assess the impact of historical purchase decisions and their relation to the current nonavailability of the secondary items. UAH shall evaluate past and present fielding decisions—along with their impact. UAH shall identify past and present producers for the identified secondary items. The analyses shall be performed using government furnished databases and automated tools such as the Commodity Command Standard System (CCSS) local area network. Other available sources of information shall be used as required. Analyses results shall be recorded in databases that shall be compatible with current government databases and delivered in digital and written report format to the government. Results also shall be presented and documented in a final report. All results shall be delivered to the government.

- 3.2 UAH shall analyze the capability of the identified producers to manufacture the secondary items. The analyses shall be performed on parts specifically identified by the government. UAH shall analyze production data to advise the government if the present industrial base is adequate for manufactures. UAH shall, during industrial base analysis, document production methodologies, using industrial base planning methodology as a generally accepted practice of analysis. UAH shall provide a written report for each secondary item analyzed. The report will detail any historical information, producer information, and provide recommended industrial base solutions. UAH shall maintain a current database and provide updates weekly as applicable.
- 3.3 UAH shall perform a manufacturing analysis on production problems identified during the manufacturing capability cycle of the secondary items data gathering. The analysis shall require review of current producers, drawings, specifications, and related materials. UAH shall determine and recommend solutions to the producibility problems and provide rationale to support recommendations. UAH shall, during manufacturing analysis, document any relevant manufacturing dialogue with producers. Information gathered shall be analyzed to assess the aviation and missile sectors and their respective subsectors. Results of the analysis shall be maintained on file and consolidated in a written report.
- 3.4 UAH shall perform cross sector analysis when necessary to determine if sectors of the industrial base are still capable of supporting the missile and aviation sectors. Examples of cross sector analysis is: the electronics sector, the casting sector, the forging sector, etc. The capability and health of the sector shall be reported and maintained on file.

4.0 Analyses of War Reserve Requirements

Members of the UAH Systems Management and Production Lab performed a detailed engineering analysis on the war reserve requirements of several hundred AMCOM-managed spare and repair parts. The results of these analyses were provided to the IOD in both electronic and hardcopy format. The electronic format of the analyses was in the form of databases that were compatible with standard government specifications. The written results of this task were published and delivered to IOD under separate cover.

5.0 Conclusion and Recommendations

During the time frame allocated by the delivery order, members of the UAH Systems Management and Production Lab, with the cooperation of representatives from AMCOM Systems Engineering and Production Directorate investigated the war reserve requirements for several hundred AMCOM-managed items. Because of the rapidly changing industrial base, it is imperative that this assessment be refreshed on a periodic basis. Only through the diligent monitoring of a complex system can its sustainability

issues be properly addressed. It is recommended that AMCOM adopt a proactive war reserve management philosophy so that the total cost of ownership is reduced over the system's life cycle.